

CLAIMS

What is claimed is:

- 1 1. A method, comprising:
2 intercepting a request to write new data to a location on a data storage unit
3 ("DSU");
4 saving a copy of old data currently residing at the location on the DSU to enable
5 restoration of the old data to the location on the DSU; and
6 writing the new data to the location on the DSU.
- 1 2. The method of claim 1, further comprising restoring the old data to the
2 location using the saved copy of the old data to rollback the DSU to a previous state.
- 1 3. The method of claim 2, further comprising:
2 generating a recovery screen asking a user whether to restore the previous state in
3 response to encountering a system error.
- 1 4. The method of claim 2, wherein saving the copy of the old data further
2 comprises saving the copy of the old data with a time marker to enable rollback of the
3 DSU to a known good state.
- 1 5. The method of claim 4, further comprising:

2 saving multiple versions of the old data correlated with time markers to enable
3 rollback of the DSU to one of multiple previous states.

1 6. The method of claim 5, further comprising:
2 pruning versions of the old data having an expired time marker.

1 7. The method of claim 2, wherein saving the copy of the old data comprises
2 saving the copy to a reserved area of the DSU hidden from an operating system (“OS”).

1 8. The method of claim 6, further comprising:
2 executing the OS within a virtual machine; and
3 proxying access to the DSU with a virtual machine monitor (“VMM”), wherein
4 the VMM intercepts the request to write the new data and saves the copy of the old data
5 to the reserved area.

1 9. A method, comprising:
2 intercepting a request to write new data to a first location on a data storage unit
3 (“DSU”);
4 saving the new data to a second location different from the first location; and
5 leaving old data currently stored at the first location to enable rollback of the DSU
6 to a previous state.

1 10. The method of claim 9, further comprising

2 intercepting a request to read the first location of the DSU;
3 determining whether the new data corresponding to the first location is currently
4 saved at the second location; and
5 diverting the request to read the first location to the second location.

1 11. The method of claim 10, wherein saving the new data to the second location
2 further comprises saving an address of the first location along with the new data at the
3 second location.

1 12. The method of claim 11, wherein the second location is located within a
2 reserved area of the DSU hidden from an operating system loaded from a partition of the
3 DSU.

1 13. The method of claim 12, wherein determining whether the new data
2 corresponding to the first location is currently saved at the second location comprises
3 searching the reserved area for a match between a read address of the request to read the
4 first location and the address of the first location saved along with the new data at the
5 second location.

1 14. The method of claim 9, further comprising rolling back the DSU to the
2 previous state by:
3 deleting the new data written to the second location; and
4 directing the request to read the first location to the first location.

1 15. A machine-accessible medium that provides instructions that, if executed by a
2 machine, will cause the machine to perform operations comprising:
3 intercepting a request to write new data to a location on a data storage unit
4 (“DSU”);
5 saving a copy of old data currently residing at the location on the DSU to enable
6 restoration of the old data to the location on the DSU; and
7 writing the new data to the location on the DSU.

1 16. The machine-accessible medium of claim 15, further providing instructions
2 that, if executed by the machine, will cause the machine to perform further operations,
3 comprising:
4 restoring the old data to the location using the saved copy of the old data to
5 rollback the DSU to a previous state.

1 17. The machine-accessible medium of claim 16, wherein saving the copy of the
2 old data further comprises saving the copy of the old data with a time stamp to enable
3 rollback of the DSU to a known good state.

1 18. The machine-accessible medium of claim 17, wherein saving the copy of the
2 old data further comprises saving the copy of the old data with an address of the location
3 to enable restoring the old data to the location.

1 19. The machine-accessible medium of claim 15, further providing instructions
2 that, if executed by the machine, will cause the machine to perform further operations,
3 comprising:

4 executing an operating system (“OS”) within a virtual machine; and
5 proxying access to the DSU with a virtual machine monitor (“VMM”), wherein
6 the VMM intercepts the request to write the new data and saves the copy of the old data
7 to a reserved area hidden from the OS.

1 20. A machine-accessible medium that provides instructions that, if executed by a
2 machine, will cause the machine to perform operations comprising:

3 intercepting requests to write new data to write locations within a first portion of a
4 data storage unit (“DSU”);

5 saving the new data to a reserved area not including the first portion; and

6 leaving old data currently stored at the write locations to enable rollback of the
7 DSU to a previous state.

1 21. The machine-accessible medium of claim 20, further providing instructions
2 that, if executed by the machine, will cause the machine to perform further operations,
3 comprising:

4 intercepting a request to read a read location within the first portion;

5 determining whether any of the new data saved within the reserved portion

6 corresponds to the read location; and

7 providing a corresponding portion of the new data in response to the request to
8 read the read location, if some of the new data saved within the reserved area is
9 determined to correspond to the read location.

1 22. The machine-accessible medium of claim 21, further providing instructions
2 that, if executed by the machine, will cause the machine to perform further operations,
3 comprising:
4 providing data saved at the read location within the first portion in response to the
5 request to read the read location, if none of the new data saved within the reserved area is
6 determined to correspond to the read location.

1 23. The machine-accessible medium of claim 22, wherein saving the new data to
2 the reserved area further comprises saving the new data to the reserved area along with
3 addresses of the corresponding write locations and wherein determining whether any of
4 the new data saved within the reserved portion corresponds to the read location comprises
5 comparing the addresses saved within the reserved area to a read address of the read
6 location.

1 24. The machine-accessible medium of claim 20, further providing instructions
2 that, if executed by the machine, will cause the machine to perform further operations,
3 comprising
4 deleting the new data saved to the reserved area to rollback the DSU to a known
5 good state.

1 25. A system, comprising:
2 a processor to execute instructions;
3 a hard disk drive (“HDD”) to save old data and new data; and
4 non-volatile memory accessible by the processor and having the instructions
5 stored thereon, which if executed by the processor, will cause the processor to perform
6 operations comprising:
7 intercepting a request to write new data to a write location on the HDD;
8 saving a copy of old data currently residing at the write location on the
9 HDD to enable restoration of the old data to the write location on the HDD; and
10 writing the new data to the write location on the HDD.

1 26. The system of claim 25 wherein the non-volatile memory further includes
2 instructions stored thereon, which if executed by the processor, will cause the processor
3 to perform further operations comprising:
4 restoring the old data to the write location using the saved copy of the old data to
5 rollback the HDD to a previous state.

1 27. The system of claim 25 wherein saving the copy of the old data currently
2 residing at the write location comprises saving the copy of the old data with a time
3 marker and an address of the write location to enable rollback of the HDD to a known
4 good state.

1 28. The system of claim 27 wherein saving the copy of the old data currently
2 residing at the write location further comprises saving the copy to a reserved area of the
3 HDD hidden from an operating system saved on the HDD.

1 29. The system of claim 25 wherein the HDD comprises the non-volatile
2 memory.

1 30. A system, comprising:
2 a processor to execute instructions;
3 a hard disk drive (“HDD”) to save old data and new data; and
4 non-volatile memory accessible by the processor and having the instructions
5 stored thereon, which if executed by the processor, will cause the processor to perform
6 operations comprising:
7 intercepting requests to write new data to write locations within a first
8 portion of the HDD;
9 saving the new data to a reserved area not including the first portion; and
10 preserving old data currently stored at the write locations to enable
11 rollback of the HDD to a previous state.

1 31. The system of claim 30 wherein the non-volatile memory further includes
2 instructions stored thereon, which if executed by the processor, will cause the processor
3 to perform further operations comprising:
4 intercepting a request to read a read location within the first portion;

5 determining whether any of the new data saved within the reserved portion
6 corresponds to the read location; and
7 providing a corresponding portion of the new data in response to the
8 request to read the read location, if some of the new data saved within the
9 reserved area is determined to correspond to the read location.

1 32. The system of claim 31 wherein the non-volatile memory further includes
2 instructions stored thereon, which if executed by the processor, will cause the processor
3 to perform further operations comprising:
4 providing data saved at the read location within the first portion in
5 response to the request to read the read location, if none of the new data saved
6 within the reserved area is determined to correspond to the read location.

1 33. The system of claim 32 wherein the non-volatile memory further includes
2 instructions stored thereon, which if executed by the processor, will cause the processor
3 to perform further operations comprising:
4 deleting the new data saved to the reserved area to rollback the DSU to a
5 known good state.